

PCT

WORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

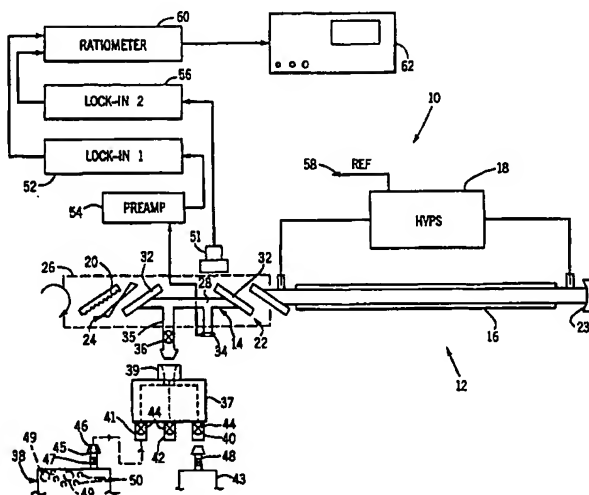
(51) International Patent Classification ⁶ : G01N 21/00, 33/497	A1	(11) International Publication Number: WO 98/57145 (43) International Publication Date: 17 December 1998 (17.12.98)
---	----	---

(21) International Application Number: PCT/US98/10771
(22) International Filing Date: 9 June 1998 (09.06.98)
(30) Priority Data:
08/872,029 10 June 1997 (10.06.97) US
(71) Applicant (for all designated States except US): QUADRIV-
IUM, L.L.C. [US/US]; 6050 North 22nd Street, Phoenix,
AZ 85016 (US).
(72) Inventors; and
(75) Inventors/Applicants (for US only): BERRY, Michael, J.
[US/US]; 3016 Ransford Circle, Pacific Grove, CA 93950
(US). YAVITZ, Edward, Q. [US/US]; 3828 Spring Creek
Road, Rockford, IL 61114 (US).
(74) Agent: VAN SOMEREN, Robert, A.; Fletcher, Yoder &
Edwards, P.O. 692289, Houston, TX 77269-2289 (US).

(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR,
BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE,
GH, GM, GW, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ,
LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW,
MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL,
TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO
patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian
patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European
patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR,
IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF,
CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).

Published
With international search report.

(54) Title: SYSTEM AND METHOD FOR DETECTION OF A BIOLOGICAL CONDITION



(57) Abstract

A system (10) and method that allows for early detection of biological conditions, such as disease, through analysis of appropriate gaseous samples. The system (10) and method are particularly amenable to the early screening for diseases, such as lung cancer, through the detection of specific biomarkers when present in exhaled breath from an individual or gaseous samples taken proximate cell cultures, pathology specimens, food specimens, etc. The preferred system implements a carbon monoxide laser (16) that generates radiation and directs it through a photoacoustic cell (14). The radiation is of a type that undergoes a characteristic intense absorption by the biomarker, if present, in the gaseous sample. The absorption of the radiation is detected acoustically.